

Remarks

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-29 remain pending in the application, with Claims 1, 14 and 21 being independent. Claims 21 and 29 have been amended herein.

Claim 29 was rejected under 35 U.S.C. § 112, first paragraph. As suggested by the Examiner, Claim 29 has been amended to depend from Claim 27 rather than Claim 28. Reconsideration and withdrawal of the § 112, first paragraph, rejection are requested.

Claims 21-26 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,160,922 (Hayashi). This rejection is respectfully traversed.

As recited in independent Claim 21, the present invention relates to a recording apparatus for performing binary recording on a recording medium by controlling binarizing means for binarizing input multi-level data and driving recording heads, each recording head comprising a plurality of recording elements, according to a binary signal output by the binarizing means. The apparatus includes a plurality of density correcting table groups, which correct input multi-level image data. The density correcting table groups each comprise a plurality of correcting tables, each having a different correction amount and having different correction characteristics from each other. The apparatus also includes a means for selecting one density correcting table group from the plurality of density correcting table groups and correcting means for correcting multi-level data by

associating the multi-level data with a correcting table from the selected correcting table group according to a pixel address of a corresponding recording head for each pixel.

Hayashi relates to an image forming apparatus that can adjust the colors of an image. The procedure for generating a tonality transform table for a γ correction 410 is described with regard to Fig. 5. In step S1, a curvature of the entire image is selected utilizing several tonality transform tables. However, it is respectfully submitted that while Hayashi discloses the use of several tonality transform tables, it cannot be said that there are a plurality of density correcting table groups, each comprising a plurality of correcting tables, as is recited in independent Claim 21. Nor does Hayashi disclose or suggest selecting one density table group and correcting multi-level data by associating the data with a correcting table from the selected correcting table group according to a pixel address of a corresponding recording head for each pixel, as is also recited in independent Claim 21.

Thus, Hayashi fails to disclose or suggest important features of the present invention recited in independent Claim 21. Accordingly, reconsideration and withdrawal of the § 102 rejection are requested.

Claims 1-5 and 9-20 were rejected under 35 U.S.C. § 103 as being unpatentable over Hayashi in view of U.S. Patent No. 6,697,167 (Takahashi). Claims 6-8 and 27-29 were rejected under § 103 in further view of U.S. Patent No. 6,439,683 (Matsumoto et al.). These rejections are also respectfully traversed.

As is recited in independent Claim 1, the present invention relates to a recording apparatus for recording an image on a recording medium by using a recording

head in which a plurality of recording elements are arranged. The apparatus includes memory means, first forming means, first setting means, second forming means and second setting means. The memory means stores a first table group for correcting input multi-level image data, the first table group comprising a plurality of first correction tables, each first correction table having a different degree of correction, and a second table group comprising a plurality of second correction tables having correction characteristics which are different from correction characteristics of the first table group with respect to different density levels. The first forming means forms a first test pattern by the plurality of recording elements at a predetermined density. The first setting means sets test correction tables for making the densities of an image to be recorded by the plurality of recording elements uniform by associating first correction tables of the first table group with respective recording elements of the plurality of recording elements based on a result of reading the densities of areas of the first test pattern that correspond to the plurality of recording elements. The second forming means forms a second test pattern having a plurality of different density levels, the second test pattern being recorded with the recording elements being corrected by the test correction tables set by said first setting means. The second setting means sets recording correction tables corresponding to each of the plurality of recording elements based on the second test pattern, the recording correction tables being determined from among the first table group and the second table group.

As is recited in independent Claim 14, the present invention relates to a method for correcting nonuniformities in the density of an image recorded by a recording

head having a plurality of recording elements arranged therein. The method includes the steps of forming a first test pattern by the plurality of recording elements at a predetermined density, setting, in a first setting step, test correction tables for making the densities of an image to be recorded by the plurality of recording elements uniform by associating first correction tables, which are from among a first table group for correcting input multi-level image data, with respective recording elements of the plurality of recording elements based on a result of reading densities of areas of the first test pattern that correspond to the plurality of recording elements, forming a second test pattern having a plurality of different density levels, the second test pattern being recorded with the recording elements being corrected by the test correction tables set in said first setting step, and setting, in a second setting step, recording correction tables corresponding to each of the plurality of recording elements based on the second test pattern, the recording correction tables being determined from among the first table group and a second table group comprising second correction tables having correction characteristics which are different from correction characteristics of corresponding first correction tables of the first table group with respect to different density levels.

As recognized by the Examiner, Hayashi does not form a second test pattern. Takahashi was cited for teaching formation of a second test pattern having a plurality of different density levels. However, although the image processing apparatus of Takahashi utilizes two test prints, test print 1 and test print 2, test print 1 is used to determine a correction coefficient of contrast potential for image formation and is not used to set test correction tables for making densities of an image to be recorded by plural

recording elements uniform. This clearly differs from the purpose of the test print in Hayashi. Accordingly, one of ordinary skill in the art would not look to Takahashi to incorporate test print 2 into the apparatus of Hayashi because the test print in Hayashi and test print 1 of Takahashi are not used to perform the same function. That is, there is no disclosure or suggestion in either reference that test print 2 in Takahashi would be complementary to the test print in Hayashi.

Moreover, even if, assuming arguendo, Hayashi were modified with the teachings of Takahashi, there is no disclosure or suggestion that the ultimate recording correction tables would be determined from among first and second table groups, as is recited in independent Claims 1 and 14.

Thus, Hayashi and Takahashi fail to disclose or suggest important features of the present invention recited in independent Claims 1 and 14.

Matsumoto et al. was cited for teaching the use of ink-jet head units. However, Matsumoto et al. is not believed to remedy the deficiencies of the citations noted above with respect to independent Claims 1 and 14.

Thus, independent Claims 1 and 14 are also patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejection are also respectfully requested.

For the foregoing reasons, Applicant respectfully submits that the present invention is patentably defined by independent Claims 1, 14 and 21. Dependent Claims 2-13, 15-20 and 22-29 are also allowable, in their own right, for defining features of the

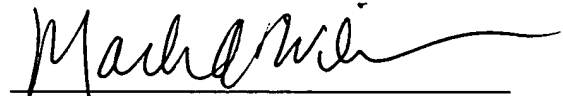
present invention in addition to those recited in their respective independent claims.

Individual consideration of the dependent claims is requested.

Applicant submits that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark A. Williamson', written over a horizontal line.

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